

NEW DESCRIPTION

A REVIEW OF THE GENUS *PARAHORMIUS* NIXON WITH DESCRIPTION OF TWO NEW SPECIES (HYMENOPTERA: BRACONIDAE) FROM INDIA¹ANJUM, Z. AHMAD^{2,3} AND Z. AHMED²¹Accepted June 17, 2008²Section of Entomology, Department of Zoology, Aligarh Muslim University, Aligarh 202 002, Uttar Pradesh, India.³Email: dzubair@gmail.com

The Indian species of *Parahormius* Nixon are reviewed. Two species namely, *P. leucopterae* sp. nov. and *P. punensis* sp. nov. are described and illustrated from India. Brief diagnosis of the genus and key to the Indian species of the genus *Parahormius* is provided.

Key words: review, Hymenoptera, Braconidae, Hormiinae, new species, India

INTRODUCTION

Wharton (1993) discussed Genus *Parahormius* Nixon in detail and defined its limits within Subfamily Hormiinae. *Parahormius* is characterized by loss of epicnemial carina, reduction or loss of the pleural flange and carina, relatively narrow prescutellar pits, rather narrow pronotum and occipital carina disappearing ventrally before reaching hypostomal carina.

Most of the species of *Parahormius* are of economic interest as they are gregarious or solitary ectoparasitoids of lepidopteran larvae of the families Coleophoridae, Cosmopterygidae, Gelechiidae and Lyonetiidae (Belokobylskij 1988; Whitfield and Wagner 1991; Wharton 1993).

The genus is almost worldwide in distribution but is yet to be recorded from the Australian region. Narendran *et al.* (2002) described four species of *Parahormius* from southern India. In the present work, the Indian species of *Parahormius* are revised. Material pertaining to five out of six species known from India was studied. Also, two new species are described. The genus is rediagnosed, and a key to the Indian species of *Parahormius* is also given. The new species, namely *P. punensis* sp. nov. is based on a single specimen since all avenues of examining additional specimens by borrowing or collecting did not yield any result.

The following abbreviations are used in the text: OOL – ocello-ocular line (distance from the outer edge of a lateral ocellus to the compound eye); POL – post-ocellar line (distance between the inner edges of the two lateral ocelli); AOL – anterior-ocellar line (distance between the inner edges of anterior and lateral ocelli); OD – diameter of an ocellus; ZDAMU – Zoology Department, Aligarh Muslim University.

Genus *Parahormius* Nixon

Parahormius Nixon, 1940: 473. Type species: *Parahormius jason* Nixon, by original designation.

Parahormius Nixon; Hedqvist, 1963: 49

Parahormius Nixon; Shenefelt, 1975: 1151

Parahormius Nixon; Belokobylskij and Tobias, 1986: 64

Parahormius Nixon; Belokobylskij, 1990b: 59-64, 1994b: 15

Parahormius Nixon; Papp, 1990: 186

Parahormius Nixon; Whitfield & Wagner, 1991: 740

Parahormius Nixon; Wharton, 1993: 150

Diagnosis: Head smooth or nearly so and sparsely setose dorsally; antennae slender; mesoscutum with a narrow and usually smooth median depression between notauli; notauli narrow and shallow posteriorly, impressed anteriorly; scutellum gently rounded laterally; scutellar sulcus shallow and comparatively narrow; precoxal sulcus and mesopleuron smooth; propodeum areolate; vein 2m-cu of hind wing present; vein M+CU of hind wing about as long as vein 1M; vein 1M of fore wing largely unsclerotized; vein 2m-cu of fore wing postfurcal; vein cu-a of hind wing present, short; first tergite completely sclerotized medially with lateral areas of tergite comparatively narrow; ovipositor sheaths somewhat widened.

KEY TO INDIAN SPECIES OF THE GENUS *PARAHORMIUS* NIXON

1. Fore wing with 3-SR shorter than or equal to r; fore wing shorter than body 2
- Fore wing with 3-SR longer than r; length of fore wing distinctly longer than body 5
2. Antennae with 19 segments *P. jason* Nixon
- Antennae with more than 19 segments 3

- 3. Malar space 0.16x as long as eye length *P. zonus* Narendran
- Malar space more than 0.2x as long as eye length 4
- 4. T1 of gaster whitish; sternaulus weakly crenulate; mesonotal disc smooth, without longitudinal furrow *P. diephobus* Nixon
- T1 yellowish; sternaulus crenulate; mesonotal disc smooth with longitudinal furrow *P. leucopterae* sp. nov.
- 5. Antennae 17 segmented, shorter than body; scutellar sulcus narrow and smooth *P. punensis* sp. nov.
- Antennae with 19 or more segments, longer than body; scutellar sulcus narrow and crenulate 6
- 6. Ovipositor a little shorter than hind metatarsus; mesosoma shorter than metasoma *P. stom* Narendran
- Ovipositor longer than hind metatarsus; mesosoma equal to or longer than metasoma 7
- 7. OOL: POL = 7: 4; notauli indicated by a pair of longitudinal carinae *P. rameshi* Narendran
- OOL: POL = 8: 3; notauli not distinct *P. absonus* Narendran

1. *Parahormius absonus* Narendran

Parahormius absonus Narendran, 2002:56

Material Examined: 1 ♀, **Paratype:** INDIA: Kerala, Walayar, 9.ix.1989, Coll. T.C. Narendran and party (ZSIC).

Host: Unknown.

Distribution: INDIA: Kerala.

2. *Parahormius leucopterae* sp. nov.

(Figs 1-3)

Female: Length of body, 1.9 mm; fore wing, 1.6 mm.

Head: 1.5x as wide as long in dorsal view, 0.9x as high as long in ventral view; eyes 3x as long as temple; eyes large, 1.5x as long as wide, inner margin of eyes parallel; temple punctate, sparsely hairy; ocelli small, elliptical, forming an equilateral triangle; AOL: POL: OD: OOL = 1: 1: 3; malar space 0.3x as long as length of eye, 2x base of mandible; face sparsely hairy, slightly convex, punctate, 1.1x as wide as long; clypeus punctate, distinctly separated from face, slightly convex, 2.2x as wide as long; frons smooth and shiny; vertex punctate, sparsely hairy; antennae 22 segmented, 0.8x as long as body, scape 1.3x as long as wide, F_{1-18} 1.7x and F_{19} 2.6x as long as wide respectively.

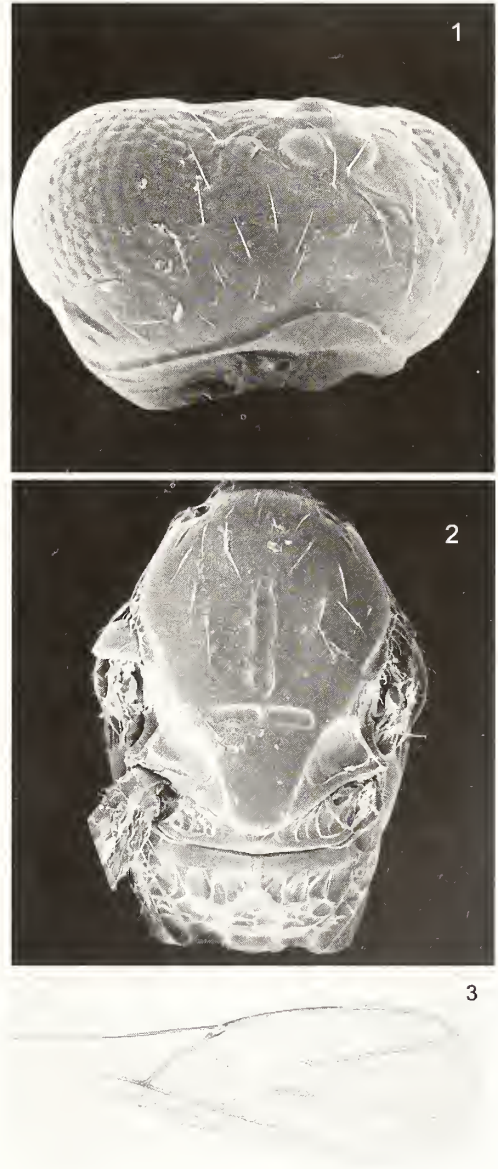
Mesosoma: 1.8x as long as wide in dorsal view, 1.7x as long as high in lateral view; pronotum short; mesonotum polished; notauli broad, smooth, distinct only basally; median lobe of mesoscutum with a median longitudinal furrow posteriorly; scutellar sulcus narrow, straight and smooth; scutellum smooth and polished; propodeum with pentagonal areola and reticulation of carinae; propleuron with transverse striations; mesopleuron dorsally with transverse striations

otherwise smooth and polished; sternaulus smooth.

Wings: Fore wings 3x as long as wide; 0.8x as long as body length; pterostigma 3.4x as long as wide, 0.9x R1a, r arising from its middle; r 0.8x as long as pterostigma; 3-RSa 0.7x as long as r, 0.5x 2RS, 0.15x 3RSb; r-m 1.3x 3RSa; 2Cu₁ arising from a little above middle of first discal cell; marginal cell slightly narrower towards apex; IRS straight; 2m-cu postfurcal; 1cu-a postfurcal; hind wing 5x as long as wide.

Legs: Hind femur 3.7x as long as wide; hind tarsus 0.9x as long as hind tibia; hind basitarsus 0.7x as long as tarsal segment 2-4 combined.

Metasoma: 1.2x as long as mesosoma; T1 sclerotized, with longitudinal striations apically, basally smooth,



Figs 1-3: *Parahormius leucopterae*, sp. nov. female: 1. Head, dorsal view; 2. Mesosoma, dorsal view; 3. Fore wing

widening markedly above and below the spiracles, spiracles present one-third basally, 1.2x as long as its apical and basal width respectively; rest of the tergites sub-sclerotized, tergites (2+3)-6 with lateral much darkened, sclerotized patches; patches of T6 joined to form a broad sclerotized band right across the tergite, tergite 7 fully sclerotized; ovipositor sheaths blunt and sparsely hairy, 2.3x as long as basitarsus, 4.6x as long as T1, 0.3x as long as fore wing.

Colour: Face, mesonotum, scutellum yellowish brown; frons, vertex, antennae, legs, metasoma, propodeum yellowish; mandible except its tip; stemmaticum, tip of mandible, ovipositor sheaths brown; ocelli transparent; eyes black; wing hyaline, pterostigma pale yellow, veins brown.

Male: same as female.

Holotype ♀: INDIA: Uttar Pradesh, Aligarh, 14.viii.2005, ex. *Leucoptera sphenogrpta* on *Dalbergia sisso*, Coll. Anjum (ZDAMU). **Paratypes:** 4 ♀, 2♂, same collection of data as holotype.

Host: *Leucoptera sphenogrpta* on *Dalbergia sisso*.

Type Locality: INDIA: Uttar Pradesh.

Etymology: The species name is based on the name of its host.

Remarks: *Parahormius leucopterae* sp. nov. is closely related to *Parahormius diephobus* Nixon. However, it differs from *P. diephobus* in having (1) Antennae 22 segmented, 0.8x as long as body (antennae 23 segmented in *P. diephobus*), (2) Malar space 0.3x as long as length of eye (malar space 0.2x as long as length of eye in *P. diephobus*), (3) Vertex punctuate (vertex somewhat smooth in *P. diephobus*).

3. *Parahormius diephobus* Nixon

Parahormius diephobus Nixon, 1940: 479.

Parahormius diephobus Nixon; Hedqvist, 1963: 49

Material Examined: 2 ♀ ♀, 1 ♂: INDIA: Uttar Pradesh, Aligarh 26.v.2005, ex. *Leucoptera sphenogrpta* on *Dalbergia sisso*, Coll. Anjum.

Host: *Leucoptera sphenogrpta*.

Distribution: INDIA: Uttar Pradesh.

4. *Parahormius jason* Nixon

Parahormius jason Nixon, 1940: 478;

Parahormius jason Nixon; Hedqvist, 1963:49.

Parahormius jason Nixon; Chatterjee & Misra, 1974: 89.

Parahormius jason Nixon; Narendran Rajmohana, Karmaly and Jobiraj, 2002:57.

Material Examined: 3 ♀ ♀: INDIA: Punjab. Changa Manga Pltn. 13.iv.1938. Collector not stated (F.I.R.); INDIA: Uttar Pradesh Aligarh, 5 ♀ ♀, 26.v.2005, 2 ♀ ♀, 8.v.2005, Coll. Anjum (ZDAMU).

Host: *Leucoptera sphenogrpta* Meyrick on *Dalbergia sisso*.

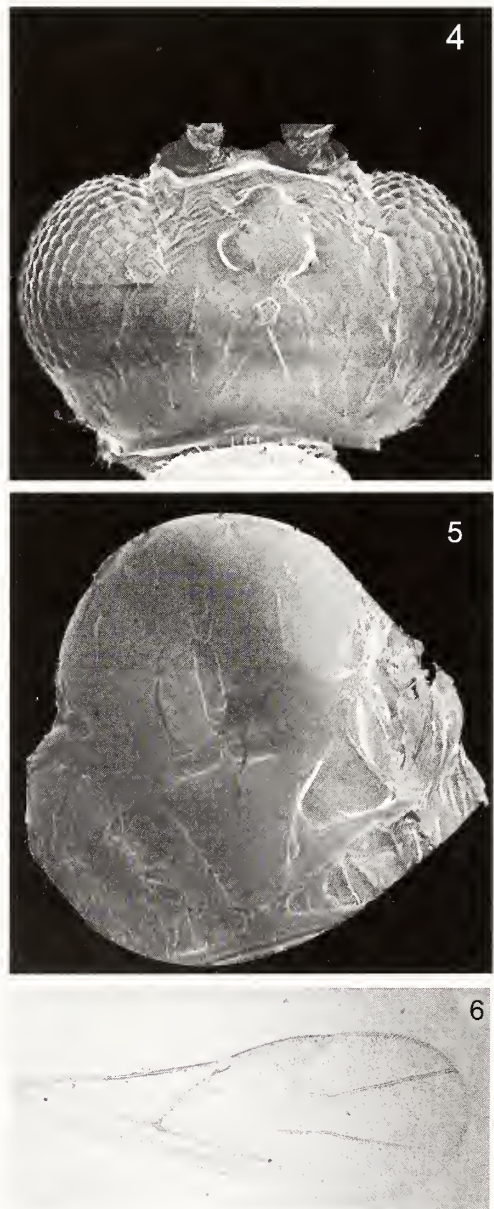
Distribution: INDIA: Uttar Pradesh.

5. *Parahormius punensis* sp. nov.

(Figs 4-6)

Female: Body: 1.6 mm long; fore wing: 1.7 mm long

Head: 1.6x as wide as long in dorsal view, 1.1x as high as long in ventral view; eyes large, 4.5x as long as temple; 1.5x as long as wide, inner margin of eyes parallel; ocelli small, elliptical, forming an equilateral triangle; AOL: POL: OD: OOL = 2: 2: 1: 4; malar space 0.3x as long as length of eye,



Figs 4-6: *Parahormius punensis* sp. nov. female: 4. Head in dorsal view; 5. Mesosoma, dorsal view; 6. Forewing

1.5x base of mandible; face sparsely hairy, smooth and polished, 1.4x as wide as long; clypeus convex, polished, distinctly separated from face; vertex, temple and frons smooth and sparsely hairy; antennae 17 segmented, 0.9x as long as body, scape 2x as long as wide, F₁ 2.5x, F₂ 2x as long a wide, rest of the segments 4x as long as wide, apical segment tapering.

Mesosoma: 1.9x as long as wide in dorsal view, 2.4x as long as high in lateral view; pronotum smooth, sparsely hairy; mesonotum smooth and polished with a median longitudinal furrow in posterior half; scutellar sulcus rather long and smooth; scutellum slightly convex, smooth and polished, side of scutellum concave and smooth; metanotum with longitudinal striations; propodeum areolate, with a pentagonal areola, having a short median carina present anteriorly, inside of areola transversely rugose, side of propodeum reticulate rugose; popleuron smooth and polished; mesopleuron anteriorly with transverse striations, otherwise smooth and polished.

Wings: Fore wings 2.6x as long as wide, 1.06x as long as body length; pterostigma 3.7x as long as wide, 0.8x R1a, r arising from its middle; r 0.2x as long as pterostigma; 3RSa 1.2x as long as r and 0.2x 3RSb; r-m as long as 3-SR; 2Cub arising from distal end of brachial cell; marginal cell slightly narrower towards apex; 3RSb straight; 2m-cu postfurcal; 1cu-a postfurcal; hind wing 5x as long as wide; M+CU 0.5x 1M.

Legs: Hind femur 4.3x as long as wide; hind tarsus 0.9x as long as hind tibia; hind basitarsus 0.8x as long as tarsal segments 2-4 combined.

Metasoma: 0.9x as long as mesosoma; T1 smooth and polished, 1.2x as long as wide apically and basally respectively, distinctly widened at the spiracular tubercles, spiracles present a little above middle of T1, spiracles 1.2x as wide as long, 1.5x as wide as apical and basal width of T1; rest of the tergites subsclerotized and smooth; ovipositor sheaths blunt and sparsely hairy, 1.3x as long as basitarsus, 2.8x as long as T1, 0.2x as long as fore wing.

Colour: Vertex, face, clypeus, scape yellow with brown markings. Pedicel, mandible except its tip, legs, mesoscutum, scutellum, metasoma yellowish brown; eyes, stemmaticum black; ocelli transparent; pronotum creamish; antennae, tip

of mandible, ovipositor sheaths brown; wings hyaline, stigma pale yellow, veins brown.

Male: Unknown.

Holotype ♀: INDIA: Maharashtra, Pune, 7.i.2005, Coll. Anjum (ZDAMU).

Host: Unknown.

Type locality: INDIA: Maharashtra.

Remarks: *Parahormius punensis* sp. nov. is closely related to *P. absonus* Narendran. However, it differs in having (1) Antennae 17 segmented, 0.9x as long as body (antennae 19 segmented, longer than body in *P. absonus*), (2) OOL: POL= 4: 2 (OOL: POL= 8:3 in *P. absonus*), (3) Fore wing 1.2x as long as body with 3RSa 1.2x as long as r (fore wing 1.2x longer than body with 3RSa 2.2x as long as r in *P. absonus*), (4) Scutellar sulcus narrow and smooth (scutellar sulcus narrow, small with longitudinal carinae in *P. absonus*).

6. *Parahormius stom* Narendran

Parahormius stom Narendran, Narendran Rajmohana, Karmaly and Jobiraj, 2002:55

Material Examined: Paratype: 1 ♀, INDIA: Kerala, Peechi, 5. xi.1989, Coll. Narendran, T.C. and party (ZSIC).

Host: Unknown.

Distribution: INDIA: Kerala.

7. *Parahormius zonus* Narendran

Parahormius zonus Narendran; Narendran Rajmohana, Karmaly and Jobiraj, 2002: 53

Material Examined: Paratype: 1 ♀, INDIA: Kerala, Vellakkritthadam (Peechi), 5.xi.1989, Coll. Narendran, T.C. and party (ZSIC).

Host: Unknown.

Distribution: INDIA: Kerala.

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